

IN THE DRAWINGS

The attached sheets of drawings include replacements to Fig. 3 and Fig. 9. These drawing sheets replace the original sheets including Fig. 3 and Fig. 9.

Attachments: Replacement Drawing Sheets (2)

REMARKS/ARGUMENTS

Favorable consideration of this application, as presently amended and in light of the following discussion, is respectfully requested.

Claims 22-72 are pending with Claims 1-21 canceled and Claims 22-72 added by the present amendment.

In the outstanding Office Action Claim 21 was rejected as being anticipated by Kumar (U.S. Patent No. 6,269,080); Claims 1-4, 6-9, 11-14, 18-20 were rejected as being unpatentable over Kumar in view of Fukushima et al. (EP 1006689, hereinafter Fukushima); Claims 5, 10 and 15 were rejected as being unpatentable over Kumar in view of Fukushima and in further view of Marturano et al. (U.S. Patent No. 5,636,230, hereinafter Marturano); Claims 16-17 were rejected as being unpatentable over Kumar in view of Chiu et al. (U.S. Patent No. 6,505,253, hereinafter Chiu) in view of Fukushima; and Applicants' arguments with regard to Claims 1-21 were considered moot in view of the new grounds of rejection.

The specification and Figures are amended to correct informalities noticed by Applicants. No new matter is added.

New Claims 22-71 substantially correspond to cancelled Claims 1-21, albeit rewritten to more clearly describe and distinctly claim Applicants' invention. Support for new Claims 22-71 is found in Applicants' originally filed specification.¹ No new matter is added.

Briefly recapitulating, Claim 22 is directed to a communications method including a) receiving, at an information distribution apparatus, one of a plurality of said retransmission request signals from a corresponding one of said plurality of wireless terminals. The method also includes b) notifying, by the information distribution apparatus, another of the plurality of wireless terminals that a retransmission request signal corresponding to a specific packet has been received; and c) retransmitting, by the information distribution apparatus, the

¹ Specification, Figures 4-6 and 9.

specified packet at a predetermined timing. Claim 38 is directed to a corresponding device. Claims 54 and 64 are directed to a corresponding mobile terminal method and device, respectively. Applicants' claimed invention allows for more efficient network control by reducing unnecessary retransmission requests.

Kumar describes a method for multicast file distribution and synchronization in data networks. As shown in Figure 4, an FDSP (file distribution process) 400 starts where an FDSP server selects one of a plurality of FDSP clients as an active receiver. At the conclusion of a multicast transmission from the FDSP server, the active receiver generates negative and positive acknowledgements to request retransmission of data packets lost in the first data transmission.

Only one FDSP client is designated as the active receiver at any given time and thus it is only the FDSP client that is allowed to request retransmission of lost data packets from the FDSP server. The FDSP server response to the retransmission request by retransmitting the missing data segment to the active receiver. The FDSP server may retransmit the data packets in unicast or multicast transmission. Once the active receiver obtains all of the file data segments, the FDSP server determines if there are any other FDSP clients with incomplete data files. If the FDSP server finds that there are more FDSP clients with incomplete data files, the FDSP server selects a new active receiver. From this point, the next active receiver can request data segments that it has not received. The process continues until all FDSP clients receive all of the data segments from the data file transmitted. When all FDSP clients have the complete data file, the process terminates until the next data file is sent from the FDSP server.²

The active receiver selection can be carried out in two different ways depending on the topology of the network. One embodiment involves a process to select an active receiver

² Kumar, column 7, lines 1-42.

in a tree topology-based network and a second embodiment involves a process to select an active receiver in a start topology-based network.³

After selection of the active FDSP client, the FDSP server starts the data distribution process, where the FDSP server sends a unicast NACK solicitation message to prepare the active receiver for data distribution. The NACK solicitation message communicates the file size information to the active receiver. The active receiver responds by sending an NACK message to request specific segments of the data file required by the active receiver. If the file is being distributed for the first time, the active receiver requests all segments of the data file. If the FDSP server does not receive an NACK from the active receiver within a timeout period of T_2 , the FDSP server resends the NACKs solicitation message. If the NACK solicitation message has been transmitted more than X times, the FDSP server generates an alarm and terminates the data distribution process. However, if the FDSP server receives the NACK from the active receiver within the timeout period T_2 , the FDSP server divides the data file into smaller data segments. The data segments are sequentially numbered and distributed by a multicast signal to all FDSP clients.⁴

If the active receiver detects that it has received all data signals of the file the active receiver transmits an unsolicited NACK to notify the FDSP server it has completed the data transmission. However, if the active receiver detects that it has not received all segments of the data file, the active receiver resends a NACK to the FDSP server. The NACK sent by the active receiver is used to request the retransmission of packets lost during the data distribution process. Here, the NACKs are only sent from the active receiver, as the active receiver is not responsible for any retransmission requests for other receivers.⁵

The NACK message includes a data segment number and bit map. The FDSP server processes the data in the NACK sent from the active receiver and retransmits the specified

³ Kumar, column 8, lines 11-16.

⁴ Kumar, column 12, line 50 – column 13, line 20

⁵ Kumar, column 12, line 42 – column 14, line 67

data packets. The retransmission should be a multicast data transfer as each FDSP client is set to receive data packets not yet received by that particular FDSP client. The unsolicited NACK is also known as a token release message which is essentially an NACK message with a “done” flag raised. After receiving the unsolicited NACK message, the FDSP server then identifies another FDSP client as the active FDSP client and the process repeats until all FDSP clients have received any and all missing data packets.

However, Kumar does not disclose or suggest Applicants’ separate steps of b) notifying, by the information distribution apparatus, another of the plurality of wireless terminals that a retransmission request signal corresponding to a specific packet has been received; and c) retransmitting, by the information distribution apparatus, the specified packet at a predetermined timing. That is, in Kumar, the base station merely responds to the active station’s request for retransmission by retransmitting the packet in question. Kumar does not first notify wireless terminals that a retransmission request signal corresponding to a specific packet has been received by one of the group of wireless terminals.

Applicants have considered the remaining applied references and submit that none of these references cure the deficiencies of Kumar. MPEP §706.02(j) notes that to establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Also, the teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art and not based on applicant’s disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Without addressing the first two prongs of the test of obviousness, Applicants submit that the Official

Action does not present a *prima facie* case of obviousness because none of the applied references disclose all the features of Applicants' claimed invention.

Accordingly, in view of the present amendment and in light of the previous discussion, Applicants respectfully submit that the present application is in condition for allowance and respectfully request an early and favorable action to that effect.

Respectfully submitted,

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